Name:   
Date:

Simplify:



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Another data point on this graph is (-3, 20).  Write a function to match this situation.  *Write the function two different ways with two different starting values.* | | |  | | | | | | |
| x | -3 | -2 | | -1 | 0 | 1 | 2 | 3 |
| y |  | 9 | |  |  |  |  |  |



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| y |  |  | 12 |  |  |  |  |  |  |

2. A ball reaches a height of 80 inches after one bounce and a height of 12.8 inches on a later bounce. From what height was it dropped?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **x** | **y** | | -2 |  | | -1 |  | | 0 |  | | 1 |  | | 2 |  | |  |
| |  |  | | --- | --- | | **x** | **y** | | -2 |  | | -1 |  | | 0 |  | | 1 |  | | 2 |  | |  |

2. Let . Use the law of exponents to explain why each of the following equations is true.

1. Using the laws of exponents to solve for *:*
2. Start with and rewrite the equation in the form .
3. Graph *y* = log5 *x* Graph *y* = log5 (*x* – 1) + 2

 

1. Each log equation can be rewritten as an exponential equation, and vice versa. Rewrite each equation below in the other form.
   1. b. c.

d. e. f.

1. Rewrite each expression:
2. Log2 8 – log2 4
3. 3 logb x + logb y
4. Log5 2 + log5 6
5. 3 logb 4 – 3 logb 2
6. Log3 20 – log3 4
7. 3 log2 x + log2 y
8. 3 log 2 + log 4 – log 16
9. Log4 64 – log4 16
10. Solve:
    1. 62*x* = 21
    2. 3*x* + 4 = 101
    3. 92*y* = 66
    4. 8 + 10*x* = 1008
    5. Use the Change of Base Formula to evaluate log3 15
    6. log (2x – 2) = 4
    7. Log 2*x* + log *x* = 11
    8. 3 log *x* – log 6 + log 2.4 = 9
11. Use the Change of Base Formula to evaluate log3 15
12. Evaluate log6 12 and convert it to a logarithm in base 3.